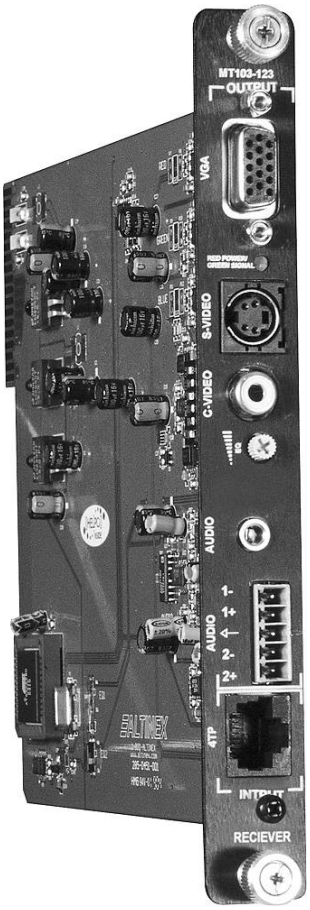

Multi Tasker®

MANUAL PART NUMBER: 400-0374-005

MT103-123

TWISTED PAIR RECEIVER TO VIDEO + AUDIO CARD USER'S GUIDE

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MT103-123**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MT103-123** and to prevent fire and shock hazards. Please read them carefully and heed all warnings.

1.1 GENERAL

- Qualified ALTINEX service personnel or their authorized representatives must perform all service.

1.2 INSTALLATION

- To prevent fire or shock, do not expose this unit to water or moisture. Do not place the **MT103-123** in direct sunlight, near heaters or heat-radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **MT103-123** carefully. Dropping or jarring can damage the unit.
- Do not pull any cables that are attached to the **MT103-123.**

1.3 CLEANING

- Clean only with a dry cloth. Never use strong detergents or solvents such as alcohol or thinner. Do not use a wet cloth or water to clean the unit. Do not open the unit to clean.

1.4 FCC NOTICE

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions found herein, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

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ABOUT YOUR MT103-123 2

MT103-123
TWISTED PAIR RECEIVER TO VIDEO + AUDIO CARD

The **MT103-123** provides a means of receiving computer video and audio signals over Twisted Pair-type (CAT-5/6) cable when used together with an ALTINEX Twisted Pair Video Transmitter such as the **MT103-122** or **DA1930CT**.

The **MT103-123** is easy to use and requires only one slot in the MultiTasker system. The **MT103-123** is able to receive one of the video sources, such as RGBHV, YPbPr, S-Video, or composite video (C-Video) and stereo audio transmitted over the Twisted Pair cable from the **MT103-122, DA1930CT,** or equivalent transmitter.

The **MT103-123** provides both audio and video outputs. The **MT103-123** offers a 15-pin HD female output for RGBHV/YPbPr signals, a 4-pin Mini DIN for S-Video, and an RCA jack for C-Video output. A 5-pin terminal block is used for balanced stereo audio output and a 3.5 mm stereo jack is used for unbalanced stereo.

The unit also offers hardware video equalization for long transmission lengths. The video equalization works in conjunction with the video equalization on the transmitter. There is also a signal detection feature that shows when an input signal is present.

The latest generation of Twisted Pair devices uses an innovative, patented technology* developed by ALTINEX. The new signal processing technology allows transmitting and receiving fully equalized computer video signals, stereo, and audio signals over long distances.

* US Patent 7,065,190

TECHNICAL SPECIFICATIONS 3

Specifications are subject to change.
See www.altinex.com for up-to-date information.

FEATURES/ DESCRIPTION	MT103-123
GENERAL	
Inputs Video+Audio	
Video+Audio	RJ-45 female (1)
Video Outputs	
RGBHV/YPbPr	15-pin HD (1)
S-Video	4-pin Mini DIN (1)
C-Video	RCA female (1)
Audio Outputs	
Stereo Audio (bal.)	5-pin terminal block (1)
Stereo Audio (unbal.)	3.5 mm stereo jack (1)
Compatibility	
Signal Types	ALTINEX Standard for Twisted Pair
Video Signal Resolutions	VGA through UXGA, 480p through 1080i, Composite Video, S-Video, and Stereo Audio
Recommended Max. Cable Lengths *Note: Measurements made using ALTINEX low-skew cable, CB3150PV.*	VGA: 640x480@60Hz 900 ft (274 m) XGA: 1024x768@60Hz 700 ft (213 m) SXGA: 1280x1024@60Hz 650 ft (198 m) UXGA: 1600x1200@60Hz 600 ft (183 m)

Table 1. **MT103-123** General

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MECHANICAL	MT103-123
Enclosure Slots Required	1
Weight (pounds)	1.1 lb (0.5 kg)
Ship Weight (pounds)	1.6 lbs (0.73 kg)
T° Operating	10°C-40°C
T° Max	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **MT103-123** Mechanical

ELECTRICAL	MT103-123
Input	
CAT-5/6 Twisted Pair	Video/Sync/Audio ALTINEX Standard
Output Video Signals	
RGBHV/YPbPr - Video	75 ohms
RGBHV - Sync	10 kohms/TTL
S-Video, Composite Video	75 ohms
Output Audio Signals	
Gain – Balanced at 1 kHz	+6 dB +/-10%
Gain – Unbal. at 1 kHz	0 dB +/-0.5 dB
Amplitude Matching (difference Left to Right)	10% maximum
Power Consumption	*(from enclosure)*
+6V	0.300 A (1.8 W)
-6V	0.200 A (1.2 W)
Total Power	3.0 W max.

Table 3. **MT103-123** Electrical

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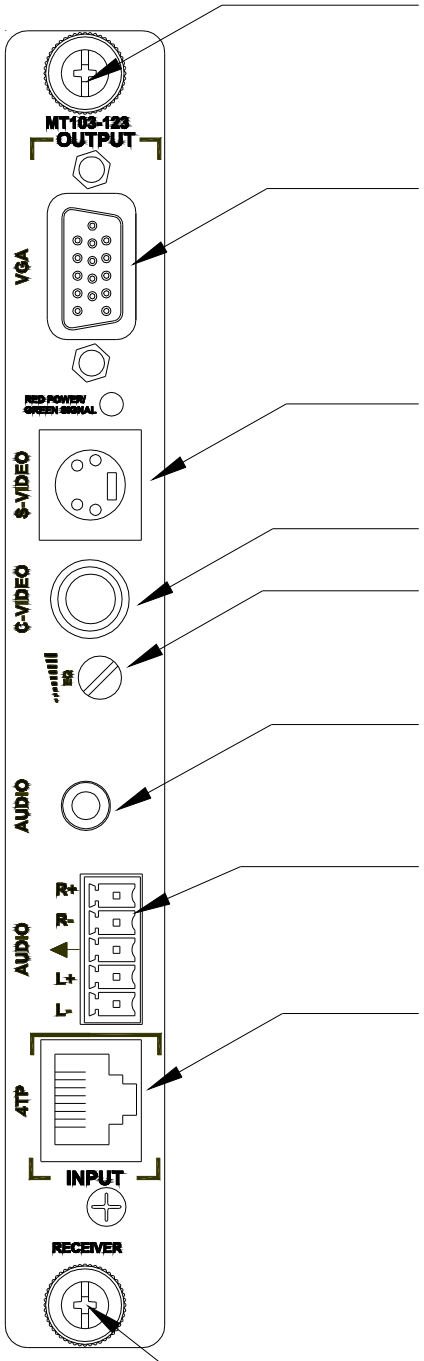
PRODUCT DESCRIPTION 4



TOP RETAINER SCREW

RGBHV/YPbPr
VIDEO OUTPUT

S-VIDEO INPUT

C-VIDEO OUTPUT

VIDEO EQUALIZATION

UNBALANCED STEREO
AUDIO OUTPUT

BALANCED STEREO
AUDIO OUTPUT

4TP INPUT

BOTTOM RETAINER SCREW

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APPLICATION DIAGRAMS 5

DIAGRAM 1: TYPICAL SETUP

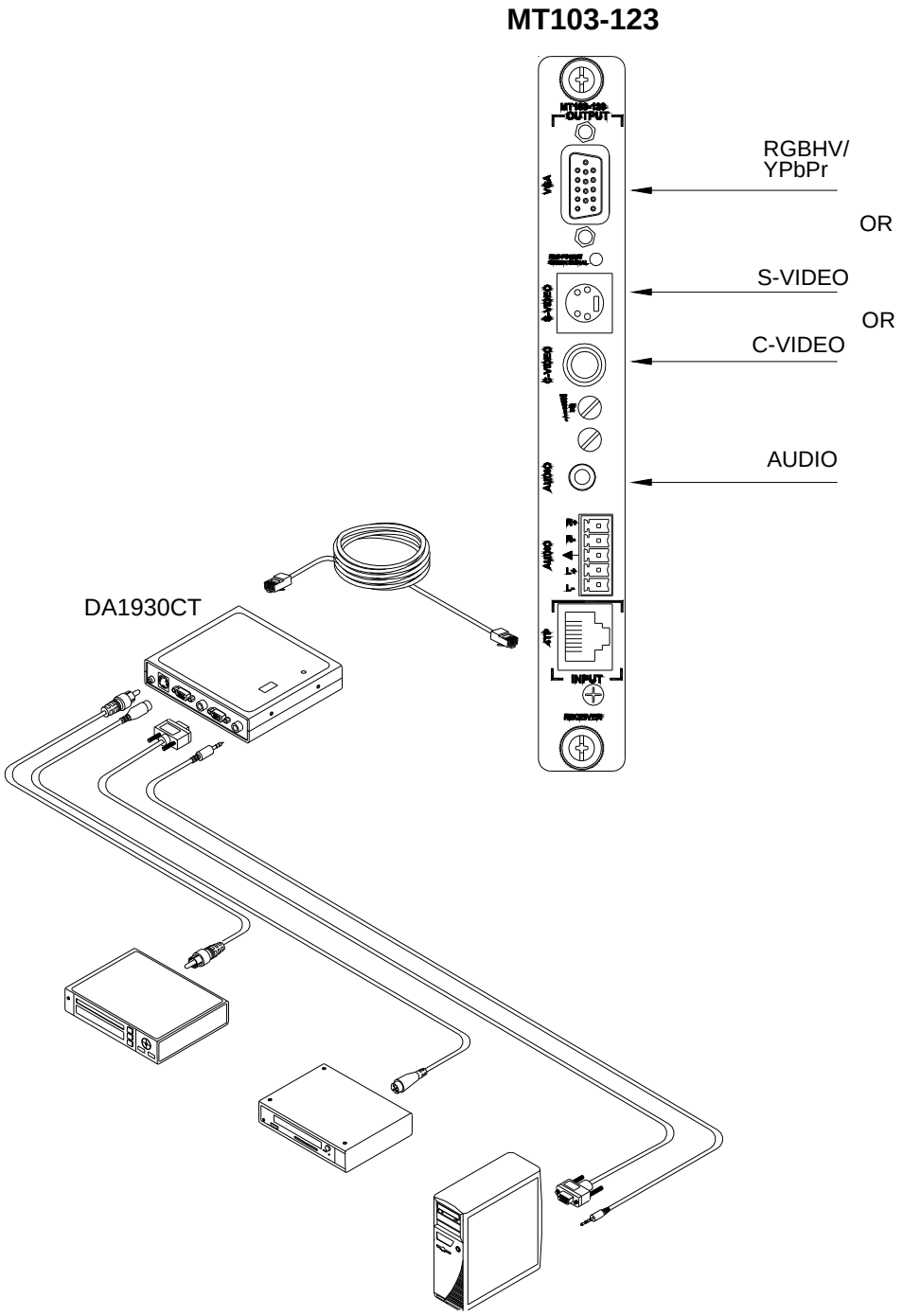

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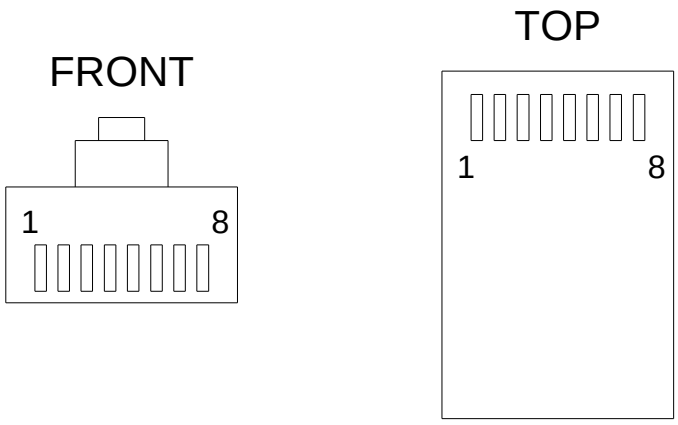
DIAGRAM 2: RJ-45 PINOUT



Pin No.	RJ-45 Output Signals
1	Orange/White
2	Orange
3	Green/White
4	Blue
5	Blue/White
6	Green
7	Brown/White
8	Brown

Table 4
Standard 568B Wiring Color Code

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DIAGRAM 3: INTERNAL VIEW

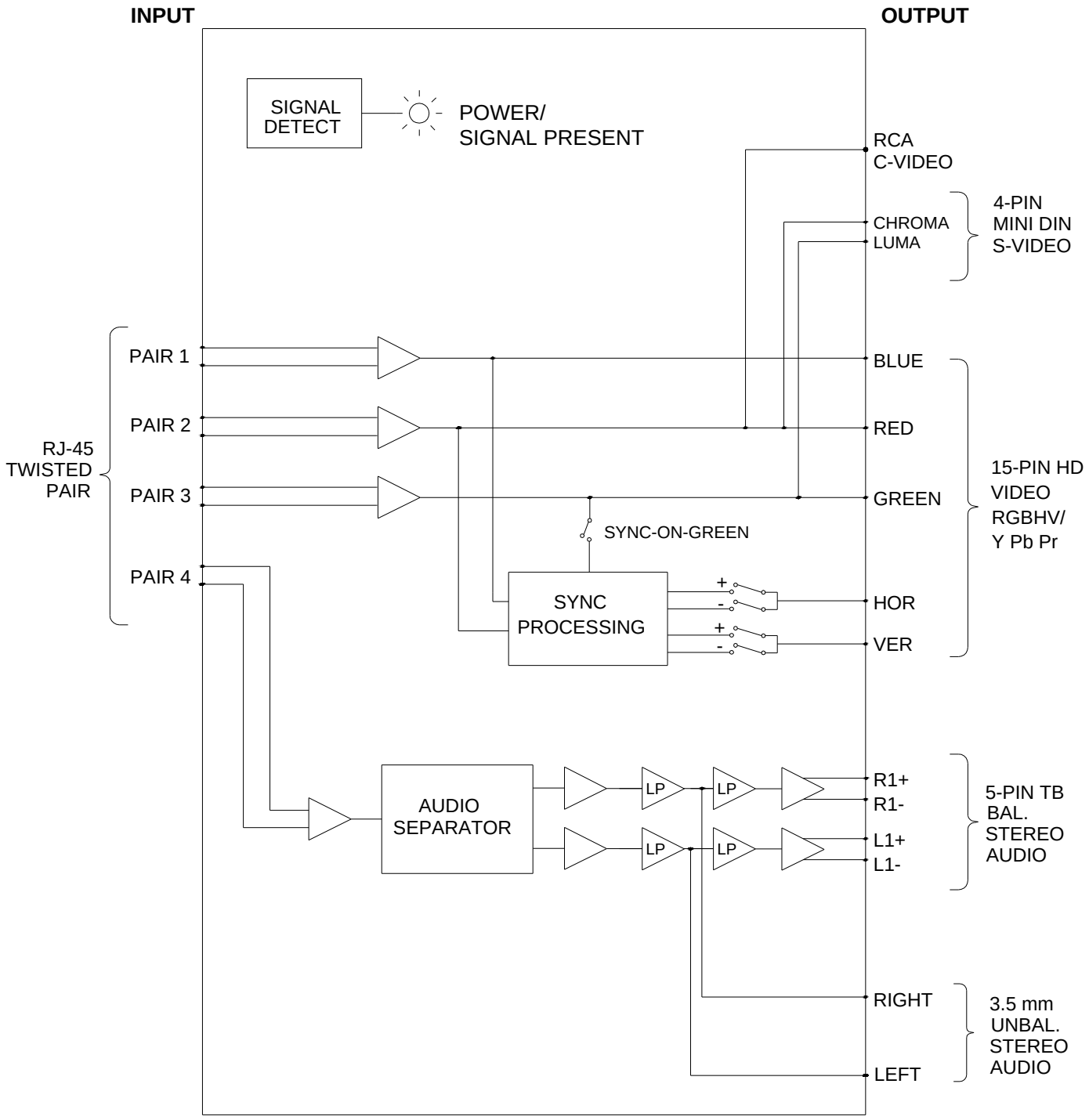

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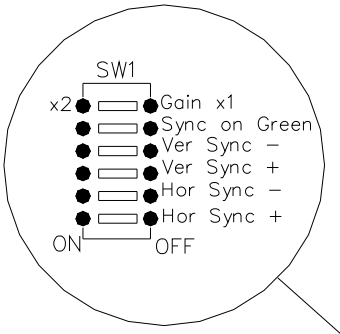
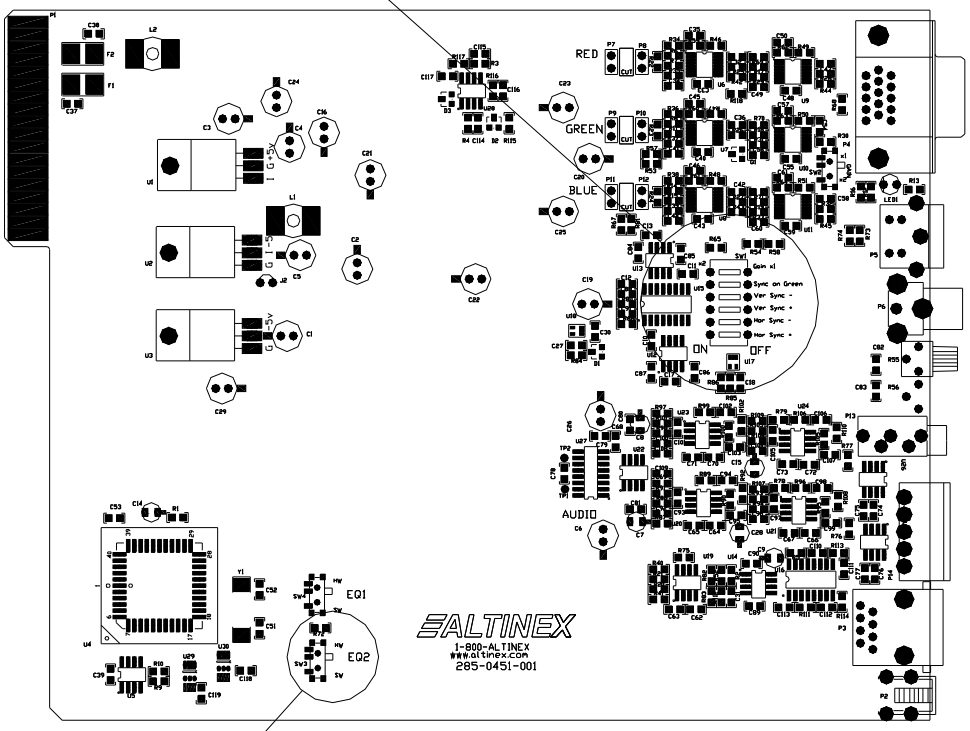
DIAGRAM 4: SWITCH SETTINGS

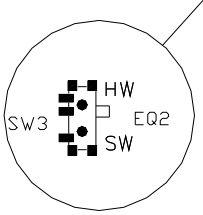
GAIN and SYNC OPTIONS

The MT103-123 has an internal switch with 6 positions to achieve the following features:

POSITION	DESCRIPTION
6	Video Gain ON=1 x1, OFF=x2 Factory Default = x1
5	Sync-On-Green (ON/OFF) Factory Default = OFF
3,4	Vertical Sync Polarity (Positive/Negative) 3 OFF, 4 ON = Negative (Factory Default) 3 ON, 4 OFF = Positive
1,2	Horizontal Sync Polarity (Positive/Negative) 1 ON, 2 OFF = Positive (Factory Default) 1 OFF, 2 ON = Negative







VIDEO EQUALIZATION (EQ)

HW = Hardware control

SW = Software control

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INSTALLING YOUR MT103-123 6

Step 1. Determine the settings required for Gain, Sync-On-Green, Horizontal Sync Polarity, and Vertical Sync Polarity. If necessary to change the factory defaults, set the switches per Diagram 4 on page 8.

Step 2. Turn off power to the MultiTasker and disconnect AC power.

Step 3. Remove a slot cover (MT200-101) from one of the unused slots. Identify the slot number and note that it is for RS-232 control.

Step 4. Slide the **MT103-123** into the slot in order to connect it to the bus. Make sure the card fits into place. Secure the card by tightening the retainer screws located on the top and bottom of the card.

Step 5. Restore power to the enclosure and verify the LED near the top of the card is on and red indicating power is applied.

Step 6. Connect the CAT-5 cable from the video output of the transmitter to the RJ-45 Input port on the **MT103-123**.

Step 7. Verify the power LED at the top of the unit changes to GREEN, indicating a signal has been detected.

Step 8. Connect the stereo audio output from the **MT103-123** to the audio receiving device.

Step 9. Connect the receiving monitor to the applicable **MT103-123** video output connector, RGBHV/YPbPr, S-Video, or C-Video depending on the input type to the transmitter.

Step 10. Verify the picture quality on the receiving monitor is equivalent to the quality as displayed on the local monitor at the transmitter. If the quality of the image is poor or non-existent, it may be necessary to adjust the video equalization on the **MT103-123** and/or the transmitter. See the OPERATION section that follows for details.

OPERATION 7

7.1 RS-232 CONTROL

The **MT103-123** has many advanced remote-control capabilities accessible through standard RS-232 communication. Control may be accomplished through a computer, control system, or any device capable of RS-232 communication.

7.1.1 RS-232 INTERFACE

The control commands for the **MT103-123** are in a simple ASCII character format.

1. **Square brackets "[ ]" are part of the command.**
2. **Use uppercase letters for all commands.**
3. **Spaces are not legal characters.**

The cards in a MultiTasker are capable of performing various functions, as well as providing feedback to the user or control system. Commands instruct a card to perform specific actions or request information from the card. Some commands do both simultaneously.

A command that instructs the card only to perform an action will generate feedback of "[ ]". The open bracket immediately followed by a closed bracket indicates the card received a valid command. If the command requested information from the card, the feedback generated by the card is the acknowledgement of having received a valid command. Invalid commands generate feedback that includes "ERR" plus an error code.

Example 1: [ERR001] Error number

Example 2: [ERRC04] Card error C4

Commands ending in "S" will be saved into memory. Commands not ending in "S" will still be executed, but will not be restored when the system is reset or powered off, then on.

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7.2 DESCRIPTION OF COMMANDS

Each command consists of three parts: Function, Card ID, and Unit ID.

[Function , Card ID , Unit ID **]**

Example: [VERC3U2]

VER = Function

C3 = Card ID or Group ID

U2 = Unit ID (optional for Unit ID 0)

For Function, see a detailed explanation under each command description.

The card ID is a unique identifier. It is equal to the enclosure slot number, or it may be an assigned value. As the slot number, the value can range from 1-4 up to 1-20 depending on the enclosure. If the value is assigned, the ID may be a maximum of 99. Card ID 0 (C0) is used for the controller and cannot be reassigned.

The group ID is a number representing a group of cards defined with the [WR] command. When using the group ID, all cards in the group will perform the given instruction.

NOTE: In this guide, cards are referenced by their IDs (C1, C2...C99). Typically, the ID number will be equivalent to the slot number. Groups will be referenced by their IDs (G1-G8).

Changing the position of a card will significantly affect the commands recorded on software definitions or third-party control systems.

The unit ID has a range from U0 to U20. U0 should be used for single unit operation. If the ID is set to U0, each command may be used without Ui. Use the command [SETU0], as explained in the MT101-101 User's Guide.

Example:

[VERC3]: For U0

[VERC3Ui]: For ID other than U0

[VERC3]: Equivalent to [VERC3U0]

COMMANDS

1. **[VER]**

   This command displays the software version and card type for the **MT103-123** card.

   Command Format: [VERCn]

   Cn = Card ID (n = slot # from 1 to max slots)

   Example:

   An **MT103-123** card is in slot 4. Send the command [VERC4] and the system will return the following feedback:

   [MT103-123 690-0197-005 C04]

   MT103-123 = model number

   690-0197-005 = software version

   C04 = card ID

2. **[C]**

   This command displays the status of the card.

   Command Format: [Cn]

   Cn = Card ID (n = # from 1 to max slots)

   Example:

   There is one **MT103-123** card in slot 4. Sending the command [C4] to the MultiTasker will yield the following feedback:

   ON, EQ=0 C04

   ON = output is on

   EQ=0 = equalization is zero

   C04 = card ID

   If there is no card in slot 4, sending the command [C4] will not return any feedback.

3. **[CnS]**

   This command saves the card settings and displays the status. After the system is reset or powered off and then back on, the card restores the saved settings.

   Cn = Card ID

   S = Save configuration

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Example:

Save the status by sending the command [C4S]. The feedback returned will be similar to the following:

ON, EQ=0 C04 [SAVED]

FEEDBACK COMMANDS

The next four commands are a function of both the card and the front panel firmware.

4. **[?]**

This command displays general information about the MultiTasker and cards installed in the unit.

Command Format: [?Ui]

Ui = Unit ID (i = from 0 to 9)

Example:

A MultiTasker with ID 1 has a front panel with part number MT101-101 and contains an MT103-122 and an MT103-123. Send the command [?U1] and receive the following feedback:

[(MT101-101U1)(MT103-122C03)
(MT103-123C04)]

MT101-101U1 = Panel model/unit ID
MT103-122C03 = An MT103-122 is in slot 3
MT103-123C04 = An MT103-123 is in slot 4

5. **[?C]**

This command will display general information about the card and its status.

Command Format: [?Cn]

Cn = Card ID (n = # from 1 to max slots)

Example:

The **MT103-123** in slot 4 has a software equalization value of 25 and the output is enabled. Send the command [?C4] to receive feedback status similar to the following.

[(MT103-123C04)(VR690-0197-005C04)
(ONC04)(EQ25C04)(SI0C04)]

All status feedback is enclosed in brackets, "[ ]". Each data field within the status is enclosed in parentheses. The first two characters identify the status type. The last three characters are the card's ID.

MT103-123 = Card model number

VR690-0197-005 = Firmware version

ON = Output status

EQ25 = Video equalization

SI0 = Input signal status

The output status line always reads "ON" since the **MT103-123** does not have an output disable feature.

The software video equalization value is shown following the EQ prefix, or 25 out of 50.

The input signal detect line will display a "1" following the SI prefix if an input signal is detected, otherwise a "0" will follow the prefix.

6. **[STA1]**

This command enables automatic feedback from the front panel. The command affects any card with auto-feedback capability, not just the **MT103-123**. The default at power on or reset is STA0, off. For more details, see the [?Cn] command definition.

Command Format: [STA1]

Feedback Prefix Definitions:
MT Card model number
VR Firmware revision
ON Output status
EQ Video equalization
SI Input signal detect

Example:

Command = [EQ=10C4]
Feedback = (EQ10C04)
EQ = Software equalization
10 = Current value (00-50)
C04 = Card ID/slot number

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7. **[STA0]**

   This command disables automatic feedback from the card and front panel. The command affects any card with auto-feedback capability, not just the **MT103-123** card**.** The default at power on or reset is STA0, OFF.

   Command Format: [STA0]

SETUP COMMANDS

8. **[SIG]**

   This command will test for the presence of an input signal and return a "1" if a signal is present and return a "0" if no signal is present.

   Command Format: [SIGCn]

   Cn = Card ID (n = # from 1 to max slots)

   Example:

   An **MT103-123** is in slot 4 and there is a valid Twisted Pair signal on the input. Send the command [SIGC4] and the system will return the following feedback:

   1

9. **[EQ]**

   This command displays the current software equalization setting and selects the equalization function for adjustment using the [+] and [-] commands. This command has no effect if the equalization switch is set for hardware control.

   Command Format: [EQCn]

   Cn = Card ID (n = slot # from 1 to max slots)

   Example: DISPLAY EQUALIZATION

   An **MT103-123** card is in slot 4 and its equalization level is set to zero. Send the command [EQC4] and receive the following feedback:

   EQ=0

   Example: ADJUST EQUALIZATION

   Continuing from the previous example, the equalization function is now active and may be adjusted using the [+] and [-] commands. The card will display the new equalization setting after each [+] or [-] command. Send the following commands to increase the equalization to a value of 5:

   [**+**] [**+**] [**+**] [**+**] [**+**] [**-**]
   EQ=1 EQ=2 EQ=3 EQ=4 EQ=5 EQ=4

   The level is now 4 and no further adjustments are required.

10. **[+]**

    See the [EQ] command for details.

11. **[-]**

    See the [EQ] command for details.

12. **[EQ=]**

    This command is used to set the equalization to an absolute value and select the equalization function for adjustment using the [+] and [-] commands. This command has no effect if the equalization switch is set for hardware control.

    Command Format: [EQ=mCn]

    m = Equalization (m = # from 0 to 50)

    Cn = Card ID (n = slot # from 1 to max slots)

    Example:

    Set the equalization level of the **MT103-123** card in slot 4 to a value of 25 by sending the command [EQ=25C4]. The [+] and [-] commands may be used to fine-tune the equalization at this time.

13. **[CLR]**

    This command clears the card settings and sets the software equalization to zero.

    Command Format: [CLRCn]

    Cn = Card ID (n = slot # from 1 to max slots)

    Example:

    Clear the **MT103-123** by sending [CLRC4].

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14. **[…S] – Save**

This command will save the configuration command being sent in memory. When sending the command [EQ=10C4S], after reset or power-up, the equalization level on C4 will be set to 10.

15. **[TEST]**

This command performs a series of tests on the internal memory. The system will display the results and report any failures. If there are no problems, the system will display the following:

MEMORY IS GOOD

Command Format: [TESTCn]

Cn = Card ID (n = slot # from 1 to max slots)

Example:

Test the internal memory of the **MT103-123** in slot 4 by sending the command [TESTC4].

16. **[FBD]**

This command turns feedback delay on or off and is necessary when installing some newer cards in older systems. If the system does not receive all of the feedback from the card, the card may be communicating too fast. This command will slow down the card's communication rate.

Command Format: [FBDmCn]

m = Delay (0= no delay, 1= delay 100mS)

Cn = Card ID (n = # from 1 to max slots)

Example:

The command [HELPC10] is sent to the card in slot 10. Some of the HELP file is displayed on the screen, but most is missing. Send the command [FBD1] to slow down the rate at which the card sends feedback to the system.

ID COMMANDS

The default card ID is the same as the card slot number. The next several commands allow the user to change the card ID to a value other than the slot number. Once the ID is changed, moving the card to another slot will not change the card ID. If a card in slot 4 is set to ID 1, then moved to slot 10, its ID will remain 1. The [RSI] command forces each installed card to take its slot number as its ID number, regardless of the slot in which it is installed.

Some cards require more than one slot in the MultiTasker system. As an example, some matrix switcher cards require 4 slots. If 5 of these cards are installed, they would be numbered C4, C8, C12, C16, and C20. Changing the ID allows the user to define the cards as C1, C2, C3, C4, and C5.

Another use for changing the card ID is to be able to use multiple systems without having to set each unit to a different unit ID. All systems may be left as unit ID 0 for ease of programming. The cards in the first unit may be numbered 1-10 and in the second unit 11-20.

17. **[RSI]**

This command resets the card IDs in the system. After sending this command, each card ID in the system will match the slot number of the card. If the card is moved to another slot, its ID number will be the new slot number.

Command Format: [RSI]

Example:

Send the command [RSI] to the system with Unit ID 0. The card in slot 1 will have ID 1, the card in slot 2 will have ID 2, and so on. If the card in slot 1 is then moved to slot 4, the card ID will then be 4.

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18. **[SIDn]**

This command sets all the cards installed in the MultiTasker system to the same card ID. After sending this command, all cards will be addressed with the same ID. Use caution when sending this command to a system with multiple board types.

Command Format: [SIDn]

n = Card ID (n = # from 1 to 99)

Example:

Send the command [SID1] to the system. All the cards in the system now have ID 1. Any commands that are sent to card ID 1 will be received and executed by each card.

19. **[SIDnCi]**

This command sets the card ID of a single card to a number from 1 to 99.

Command Format: [SIDnCi]

n = Card ID (n = # from 1 to 99)
Ci = Slot Number (i = # from 1 to max slots)

Example:

Send the command [SID50C10] to set the ID of the card in slot 10 to an ID of 50.

20. **[SID+]**

This command sets the card ID of all the cards in a system to their slot number plus the offset value.

Command Format: [SID+n]

n = Offset amount (n = # from 0 to 99) The maximum card ID is 99, so subtract the highest slot number from 99 to find the maximum offset. For example, in an 8-slot enclosure, the maximum offset would be 91. The slot number (8) plus the offset (91) equals 99.

Example:

There are two 20-slot enclosures to be connected together during normal operation. The first unit will use the default IDs where the card ID is equal to the slot number. The second unit will have the same unit ID, but each card ID will be offset by 20.

Connect the computer to the second unit only and send the command [SID+20] to set the ID of all the cards in the second enclosure to their slot number plus 20. Reconnect both units to the computer.

The cards in the first unit will be referenced as card IDs 1-20 and the cards in the second unit will be referenced by card IDs 21-40.

21. **[RSN]**

This command displays the slot number of a card with a specified ID number. If more than one card has the same ID, each slot number will be displayed.

Command Format: [RSNCi]

Ci = Card ID (i = # from 1 to 99)

Example:

The card in slot 4 takes up four slots in the enclosure. Its ID was set to 1 since it is the first card installed in the system, reading from left to right. Send the command [RSNC1] to find the slot number of this card. The system responds with the following feedback:

[4]

22. **[HELP]**

This command displays information available for the MultiTasker interface commands.

Command Format: [HELPCn]

Cn = Card ID (n = # from 1 to max slots)

Example:

Display the RS-232 commands available for the **MT103-123** in slot 4 by sending [HELPC4]. The commands along with a brief description will be displayed in the Terminal Window.

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GROUP COMMANDS

Group commands allow several cards with the same functions to be controlled simultaneously with a single command. Up to 8 groups (G1-G8) may be defined. These commands apply to all cards, not only the **MT103-123.**

23. **[WR]**

This command adds cards to a group. In MultiTasker systems with audio and video cards, the groups are typically as follows:

Group 1 = Video Cards

Group 2 = Audio Cards

Group 3 = Video and Audio Cards

Command Format: [WRCn$_1$Cn$_2$…Gk]

Cn = Card ID (n = slot # from 1 to max slots)

Gk = Group ID (k = # from 1-8)

Example:

Add C2, C4, and C6 to G5 by sending the command [WRC2C4C6G5]. After executing this command, G5 will consist of C2, C4, and C6.

Now add C8 to G5 by sending [WRC8G5]. C8 is added to G5, and G5 is not overwritten. View the contents of G5 by sending [RDG5] and receiving the following feedback:

[G5=C2C4C6C8]

24. **[RMC]**

This command removes one or more cards from a group.

Command Format: [RMCn$_1$Cn$_2$…Gk]

Cn = Card ID (n= # from 1 to max slots)

Gk = Group ID (k = # from 1-8)

Example:

G5 consists of C2, C4, C6, and C8. Remove C6 and C8 by sending [RMC6C8G5]. View the contents of G5 by sending [RDG5] and receiving the following feedback:

[G5=C2C4]

25. **[RMG]**

This command deletes one or all groups.

Command Format: [RMGk]

Gk = Group ID (k = # from 1-8, * for all)

Example:

Remove all cards from G52 by sending [RMG5]. The system will return the following feedback:

[G5=0]

Example 2:

Remove all cards from all groups, effectively deleting all groups, by sending [RMG*]. The system will return the following feedback:

G1-G8: EMPTY

26. **[RD]**

This command reads and then displays the members in a group.

Command Format: [RDGk]

Gk = Group ID (k = # from 1-8)

Example:

C2, C4, and C6 make up G5. Read the member data for G5 by sending the command [RDG5]. The system will return feedback as follows:

[G5=C2C4C6]

The feedback shows G5 and then the cards that make up G5. In this case, G5 includes C2, C4, and C6.

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7.3 SUMMARY OF COMMANDS

Card Commands

1) **[VER]** Display firmware revision
2) **[C]** Display card status
3) **[CnS]** Save card settings
4) **[?]** Display system cards
5) **[?C]** Display card information
6) **[STA1]** Enable auto feedback
7) **[STA0]** Disable auto feedback
8) **[SIG]** Input signal detect
9) **[EQ]** Display equalization value
10) **[+]** Increment
11) **[-]** Decrement
12) **[EQ=]** Set equalization value
13) **[CLR]** Reset card to defaults
14) **[…S]** Save command configuration
15) **[TEST]** Test internal memory ICs
16) **[FBD]** Enable/disable feedback delay
17) **[RSI]** Reset Card IDs
18) **[SIDn]** Set all Card IDs
19) **[SIDnCi]** Set one Card ID
20) **[SID+n]** Set all Card IDs to an offset
21) **[RSN]** Display card slot number
22) **[HELP]** Display available commands

Group Commands

23) **[WR]** Group multiple cards
24) **[RMC]** Remove member(s) from group
25) **[RMG]** Delete group
26) **[RD]** Display group members

7.4 MENU MODE

Menu Mode commands allow virtually the same functionality as programming commands. Unlike the programming commands in the previous sections, menu commands prompt the user to select from a list of available options. The system then responds based upon selections made by the user.

7.4.1 MENU COMMAND DEFINITIONS

Refer to section 7.2 for details on card functions and examples. Following is a cross-reference of menu mode sections versus programming commands.

MENU	COMMAND
Control	[CLR]
Setup	
Equalization	[EQ], [+], [-]
Status	[VER], [C]
Help	[HELP]

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7.4.2 USING MENU MODE

Do NOT press any keys except those relating to the current menu. If you press the ENTER key after entering a letter or digit, the original list of systems will be displayed.

1. In order to enter Menu Mode, the system needs to be connected to a computer running RS-232 control software.
2. In the Terminal Window, press the ENTER key on the keyboard.
3. The system checks all MultiTaskers on the RS-232 bus and displays a list of available systems.

   Example: 1: U1
   2: U2
   3: U3

4. Enter the ID number of the desired system. In the example above, enter a "1" for the MultiTasker with unit ID 1.
5. The system then interrogates all the cards available in its enclosure and displays a list of available cards.

   Example: 01: MT103-121
   02: MT103-122
   04: MT103-123

6. Enter the 2-digit ID and a menu for the card will be displayed. In the example above, enter "04" for the **MT103-123**.
7. The system will prompt for selections specific to the selected card.
8. Read each menu carefully, and continue selecting keys as prompted.

NOTE: Menus for data entry have two prompts: "Key=" and "ESC" (escape). Press the escape key to return to the previous menu.

7.4.3 MENU TYPES

1. MAIN MENU

   The first menu displayed after selecting the card is the Main Menu. This menu provides access to the key functions related to the card. Press the key representing the menu item for access and a sub-menu will appear.

2. SUB-MENUS

   Each menu item will display either a sub-menu, or a list of options. Press the key corresponding to the desired choice.

7.4.4 MT103-123 MENUS

Following are the menus available to the **MT103-123**. The first menu is the Main Menu only. The second listing is an expanded view of the card's sub-menus.

The expanded menu contains values in parentheses indicating the current setting or value of the parameter. In some areas, additional comments are provided for clarification.

MT103-123 MAIN MENU

1: CONTROL

2: SETUP

3: STATUS

4: HELP

MT103-123 EXPANDED VIEW

1. CONTROL:

   1: CLEAR (Set to Defaults)

2. SETUP:

   1: SET EQUALIZATION

3: STATUS

This selection displays the card status, firmware version, and then redisplays the Main Menu. It is equivalent to the [Cn] and [VERCn] commands.

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4: HELP

*This selection displays a list of commands available for the **MT103-123** along with a brief description. It is equivalent to the [HELP] command.*

ESC

This selection returns you to the parent menu with the listing of all cards.

7.4.5 MENU MODE EXAMPLES

All Menu Mode examples assume an **MT103-123** is installed in slot 4. Start by clicking the mouse in the Terminal Window. Press ENTER and a list of available cards will be displayed.

NOTE: The communication software you use may echo each character as it is typed when entering numeric values (not selecting menu items). For example, entering a value of 03 may appear as 0033 on the screen.

1. Increase the equalization.

Follow the keystrokes below to increase the level of equalization.

Enter	List systems
1	List cards in U1
04	Select MT103-123 in slot 4
2	Select SETUP Menu
1	Select SET EQUALIZATION
1	INCREASE EQUALIZATION
	Repeat until desired equalization level is obtained.
ESC	Return to SETUP Menu
ESC	Return to the Main Menu

2. Clear the card.

Starting from the Main Menu, select the MT103-123 card and set it to the factory defaults. Follow the keystrokes below.

1	Select CONTROL Menu
1	Select CLEAR
1	Select YES to clear the card
ESC	Return to the Main Menu

3. Display card status.

Starting from the Main Menu, follow the keystrokes below.

3	Display card status

NOTE: The status will be displayed, followed by the Main Menu being redisplayed.

7.5 ADJUSTMENTS

The **MT103-123** requires only one adjustment to be made for optimal performance. That is for video equalization for long cable lengths.

7.5.1 VIDEO EQUALIZATION

Video equalization is provided to fine-tune the displayed image on the remote display. The equalization adjustments on the **MT103-122** and **MT103-123** work together for maximum cable lengths. The equalization can be adjusted either from the potentiometer located on the card's panel or through RS-232 control. See the INSTALLATION section for details.

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TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MT103-123.** However, we would like to offer suggestions for the following:

8.1 LED IS NOT RED

The LED should be on and red when power is applied and there is no video signal present. If the LED is on and green, the unit is receiving power and a signal.

Cause 1: No power to the card.

Solution: Verify the enclosure has power and that other cards in the enclosure have power. If there is still no power, see Cause 2.

Cause 2: Card is not plugged in all the way.

Solution: Push the card in all the way. If the LED is still not on, see Cause 3.

Cause 3: Card cage slot has a problem.

Solution 1: Test the card in other slots of the card cage. If the slot was damaged, the card may work in other slots. If the card works in other slots and the LED lights, the problem is the card cage slot. The card cage may require service. Call ALTINEX at (714) 990-2300. If the other slots do not work and the LED is still not lit, see Solution 2.

Solution 2: Take any other known good card with an LED and verify that the slot used is good by seeing if the other card's LED lights in that slot. If it lights, then the original card may be the source of the problem. Call ALTINEX at (714) 990-2300.

8.2 LED IS NOT GREEN

Cause 1: There is no power.

Solution: Disconnect the video input from the **MT103-123** and verify the LED is on and red indicating power is present. Reconnect the computer's video output. If the LED is still not green see Cause 2.

Cause 2: There is no Sync signal.

Solution: Verify the computer output is operating correctly by connecting it directly to a monitor. If the display is good, call ALTINEX at (714) 990-2300.

8.3 NO SOUND

Cause 1: The source has a problem.

Solution: Check the source and make sure that there is a signal present and all source connections are correct. If the source is working and there is still no sound, see Cause 2.

Cause 2: Cable connections are incorrect.

Solution: Make sure that cables are properly connected. Also, make sure that the continuity and wiring are good. If there is still no sound, see Cause 3.

Cause 3: The receiving device has a problem.

Solution: Make sure the receiving device has power and is turned on. If there is still no sound, please call ALTINEX at (714) 990-2300.

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8.4 NO REMOTE IMAGE

Cause 1: The source has a problem.

Solution: Check the image on a local monitor and verify the quality is good. If the local image is good, see Cause 2.

Cause 2: Video equalization required.

Solution: Adjust the Video Equalization control on the **MT103-123**. Long cable runs may require adjustment on both the **MT103-122** and the **MT103-123**.

8.5 RECEIVING DISPLAY QUALITY IS POOR

Cause 1: The source has a problem.

Solution: Check the source image on a local monitor and verify the quality is good. If the local image is good, see Cause 2.

Cause 2: Video equalization required.

Solution: Adjust the Video Equalization control on the **MT103-123**. Long cable runs may require adjustment on both the **MT103-122** and the **MT103-123**. If the image is still not correct, call ALTINEX at (714) 990-2300.

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9.1 LIMITED WARRANTY/RETURN POLICIES

Please see the ALTINEX website at www.altinex.com for details on warranty and return policies.

9.2 CONTACT INFORMATION

ALTINEX, Inc.

592 Apollo Street

Brea, CA 92821 USA

TEL: 714 990-2300

TOLL FREE: 1-800-ALTINEX

WEB: www.altinex.com

E-MAIL: solutions@altinex.com